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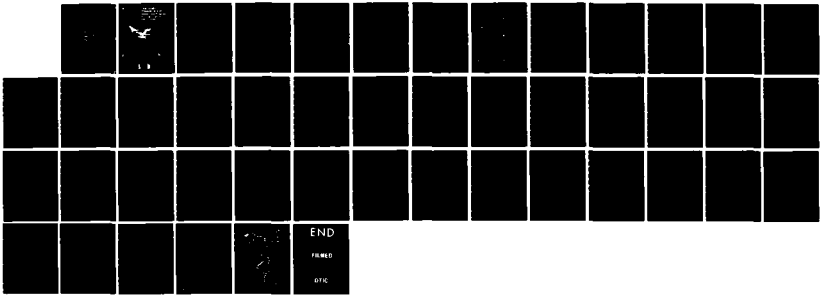
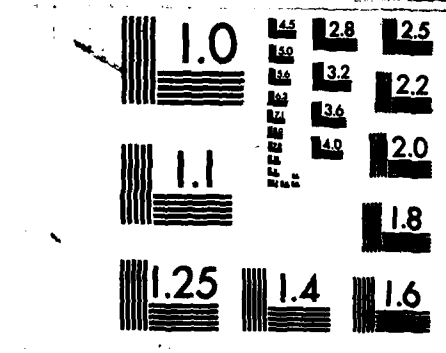




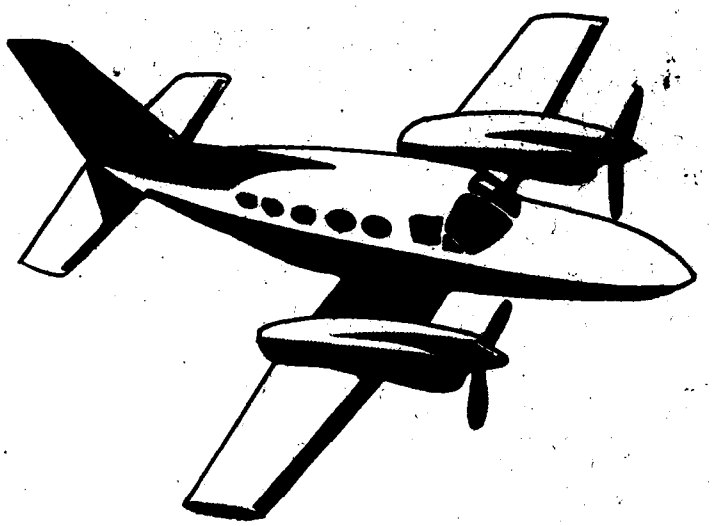
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

U.S. Department of Transportation
Federal Aviation Administration

Office of Environmental and Energy
Washington, D.C. 20591

FAA/GAMA Propeller Aircraft Noise Test Program

Salina Municipal Airport
Salina, Kansas



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15. Supplementary Notes

16. Abstract

In September, 1984, the FAA, with the cooperation and support of the General Aviation Manufacturers' Association (GAMA), conducted a noise measurement program on small propeller-driven aircraft at Salina Municipal Airport, Salina, Kansas. The program objectives were (1) to obtain takeoff noise data using prepared international and U.S. certification procedures for propeller-driven small airplanes; and (2) to measure the benefits of noise abatement takeoff procedures being developed by the manufacturers for inclusion in the Pilot's Operating Handbook. For the five twin and four single engine aircraft tested, the results show an average noise reduction of 4.4 decibels when using reduced power procedures after takeoff. Keywords:

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FAA/GAMA PROPELLER AIRCRAFT
NOISE TEST PROGRAM

I. INTRODUCTION

In September, 1984, the Federal Aviation Administration, with the cooperation and support of the General Aviation Manufacturers Association, conducted a noise measurement program on propeller-driven aircraft at Salina Municipal Airport, Salina, Kansas. The program objectives were:

(1) to measure the benefits of noise abatement takeoff procedures being developed by the manufacturers for inclusion in the Pilot's Operating Handbook, and

(2) to obtain takeoff noise data using proposed ICAO Annex 16 and FAR Part 36 certification procedures for propeller-driven small airplanes.

ICAO and FAA noise standards prescribe procedures for noise certification of small propeller-driven airplanes. The standards require measurement of the noise levels resulting from level flyovers at 1000' at not less than the highest power in the normal operating range. The regulations also require application of an aircraft performance correction based on the aircraft's climb performance and the associated effect on noise levels.

Proposed changes to Chapter 6 of ICAO Annex 16 and FAR Part 36 Appendix F would substitute a takeoff test for the current flyover procedures. For the Salina takeoff tests, the flight

procedures (using maximum continuous installed power), general test conditions, measurement equipment and procedures, and data adjustments to correct for off-reference test conditions were in accordance with the proposed regulatory changes. Where appropriate, the measurements and data adjustments for the reduced power takeoffs were also in accordance with the proposed changes.

II. TEST LOCATION

Salina Municipal Airport was selected because of its low ambient noise level, the availability of a runway dedicated to the tests and the proximity of the airport to the home field of many of the aircraft. The test aircraft used runway 12 with a right hand race track pattern. Figure 1 shows the flight track overlaid on an airport obstruction chart. Also shown on Figure 1 are the noise measurement and photographer sites and the location of the aircraft rotation point. A detailed description of the airport is contained in the master airport record dated September 15, 1983, appended as Attachment A.

III. FLIGHT PROCEDURES

A. The noise measurement point is required to be on the extended centerline of the runway at a distance of 8200 feet (2500m) from the start of takeoff roll. However, by using flight path intercept procedures, the noise measurements were made on a grassy area about 50 feet abeam runway 12-30 at about midfield. In order for a test run to be acceptable, the aircraft

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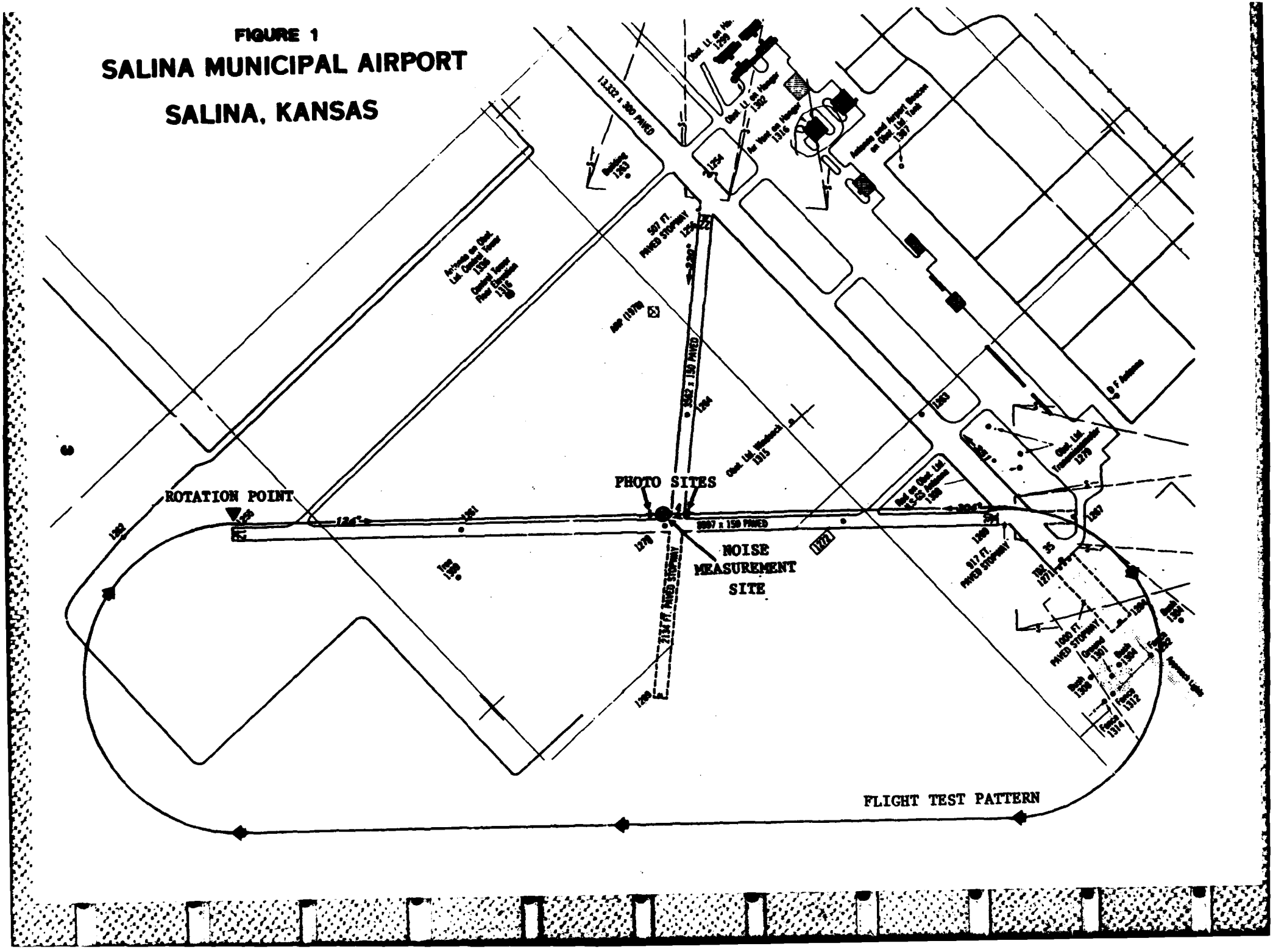
FIGURE 1

SALINA MUNICIPAL AIRPORT

SALINA, KANSAS



were required to pass over the measurement point within ± 10 degrees from the vertical and within 20% of the reference altitude.

B. The reference altitudes were calculated for the following atmospheric conditions:

(1) Sea level atmospheric pressure of 1013.25 mb,

(2) Ambient air temperature of 59°F (15°C)

(3) Relative humidity of 70 percent, and

(4) Zero wind.

C. The takeoff reference altitudes for the proposed certification procedure were calculated by the manufacturer assuming the following two segments:

(1) First segment.

(a) Takeoff power from the brake release point to the point at which the height of 50 feet (15m) above the runway is reached.

(b) A constant takeoff configuration selected by the applicant was maintained through this segment.

(c) The length of the first segment corresponded to the airworthiness approved value for a takeoff on a level paved runway.

(2) Second Segment.

(a) The beginning of the second segment corresponds to the end of the first segment.

(b) Each airplane was in the climb configuration with landing gear up and flap setting

corresponding to normal climb procedures throughout the second segment.

(c) In each case, the aircraft velocity was the speed for best rate of climb, V_y.

(d) Maximum continuous installed power and rpm were maintained throughout the second segment.

(3) Tests using these procedures were designated the "A" series.

D. The manufacturer of each test aircraft described a reduced power takeoff procedure and calculated the reference altitude at 8200 feet from the start of takeoff roll at maximum takeoff gross weight under the atmospheric conditions specified in Section IIIB. In general, the procedures used maximum continuous power to 500 feet above ground level, then power was reduced to 75% of maximum continuous with the lowest rpm consistent with that power to continue climbing over the measurement site. Tests using these procedures were designated the "B" series.

E. The Piper Seneca III was also tested using a maximum power rating limited to five minutes. The takeoff reference altitude for this series (designated "C") was calculated using the procedure described in Section IIIC.

IV. Data Acquisition

A. Acoustical Data.

(1). The terrain in the vicinity of the measurement location was relatively flat with no obstructions within a conical space above the measurement

position, the cone defined by an axis normal to the ground and by a half-angle 75° from the axis. The grass was mowed to a height of about two inches.

(2) The measurement site was located 50 feet abeam of runway 12-30 at a point 5000' from the threshold of runway 12. As flight path intercept procedures were used, this site represented 8200' from start of takeoff roll as required by the proposed regulation.

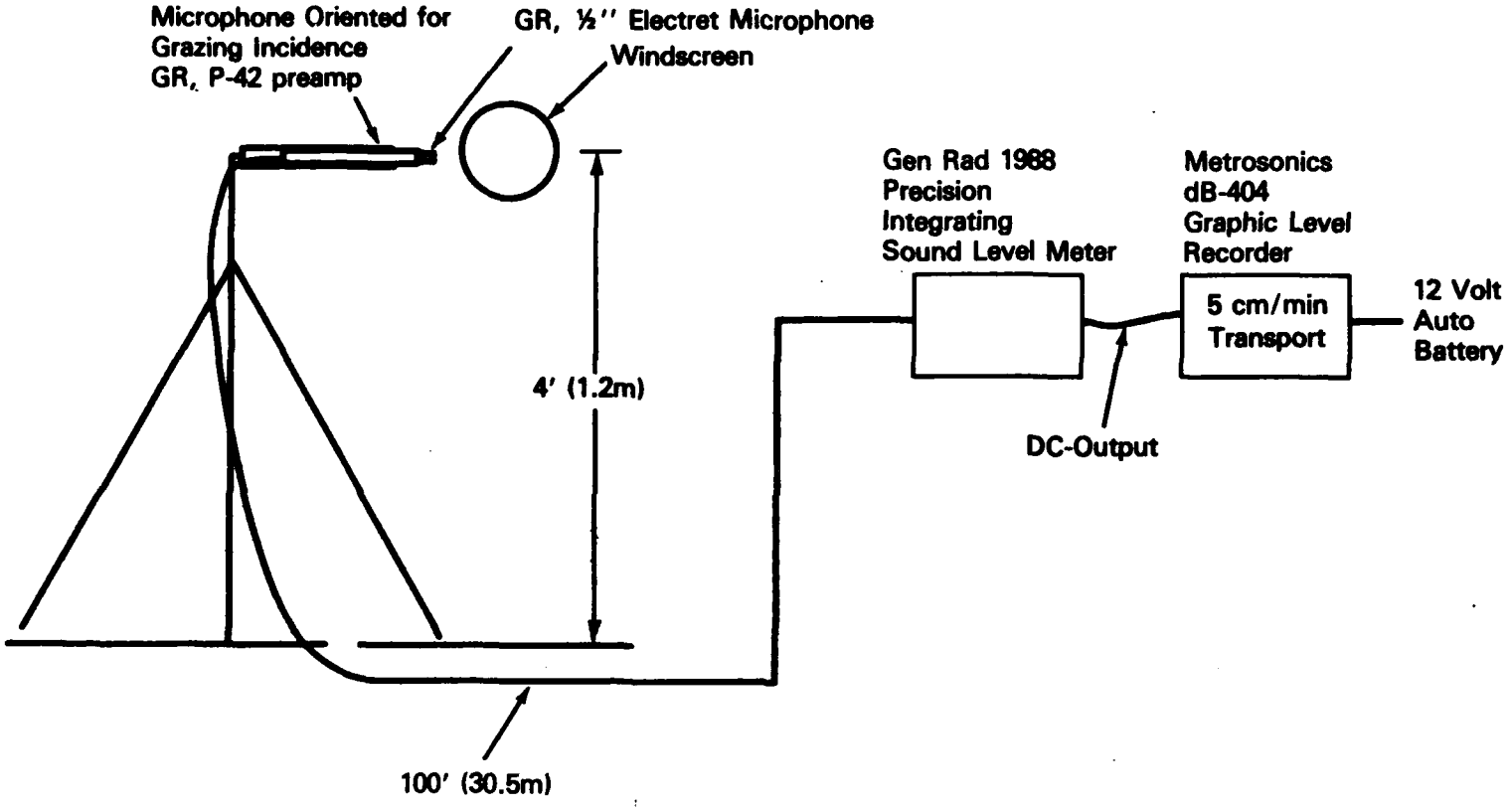
(3) Two identical microphone preamp systems situated 12 inches apart were used at the measurement site. Each system consisted of a General Radio 1/2 inch electret microphone (1962-9610) driving P-42 preamplifiers, with the microphones oriented for grazing incidence at four feet above the ground. Three inch windscreens were used throughout the tests. A 100-foot cable connected each microphone system to a General Radio 1988 Precision Integrating Sound Level Meter (PISLM). One of the GR 1988 PISLMs drove a Metrosonics Graphic Level Recorder. The acoustics data acquisition setup is shown in schematic form on Figure 2, whereas the measured and corrected acoustical data are listed in Section VIII.

B. Aircraft Position Data.

(1) Aircraft position relative to the reference flight profile and the noise measurement site was determined by scaling photographs taken of the aircraft as it

FIGURE 2

Acoustical Measurement Instrumentation



Direct Read Noise Measurement System

passed over cameras located along the flight track 100 feet before and 185 feet past the noise measurement site. The altitudes calculated were averaged (with proper weighting) to obtain the altitude over the microphones. A polaroid camera was used to determine in situ whether or not the aircraft was within the test window (±20% of the reference altitude and ±10° from the azimuth). Acceptable data from at least six overflights were required to insure a statistically valid average sound level. Further, the variation in these flights had to be such that the 90% confidence level did not exceed 1.5 decibels.

C. Meteorological Data.

(1) Wind direction and velocity at ten meters above ground were recorded for each run. Relative humidity and temperature at ground level were recorded every 15 minutes throughout the tests. These data are tabulated in Appendix A.

D. Aircraft Flight Data.

(1) For each test run, an FAA observer recorded the manifold pressure or torque, propeller rpm, indicated airspeed, altitude over the noise measurement site and the outside air temperature.

(2) A videotape record was made of the instrument panel during each test run. Data from these tapes are presented in Appendix B.

(3) Tachometer checks using a view-thru tachometer were made on each test aircraft.

TABLE VIII

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: MOONEY 201 TEST DATE: 9/18/84

REFERENCE ALTITUDE: 790'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A56	793	76.55	.16	.04	.58	.62	77.95
A57	702	76.35	.14	-1.13	.58	.6	76.54
A58	721	76	.14	-.87	.66	.62	76.55
A61	749	76.9	.15	-.51	.66	.63	77.83
A62	717	76.4	.14	-.93	.66	.62	76.89
A64	838	76.35	.17	.56	.66	.62	78.36
						AVERAGE>>	77.35
						STD DEV>>	0.79
						90% C.I.>	0.65

AIRCRAFT: MOONEY 201 TEST DATE: 9/18/84

REFERENCE ALTITUDE 645.00 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B66	677.00	72.45	0.13	0.46	0.65	0.00	73.69
B71	648.00	73.10	0.13	0.04	0.65	0.00	73.92
B74	681.00	71.75	0.14	0.52	0.65	0.00	73.06
B76	641.00	72.75	0.13	-0.06	0.65	0.00	73.47
B77	690.00	71.70	0.14	0.64	0.65	0.00	73.13
B78	685.00	71.50	0.14	0.57	0.65	0.00	72.86
						AVERAGE>>	73.36
						STD DEV>>	0.41
						90% C.I.>	0.33

TABLE VII

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: SENECA III TEST DATE: 9/18/84

REFERENCE ALTITUDE 928'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A37	877	78.35	0	-.54	.14	.04	77.99
A38	955	78.55	0	.27	.14	.04	79.00
A39	926	78	0	0	.06	.04	78.10
A40	962	78.7	0	.34	.14	.04	79.22
A41	1024	80	0	.94	.14	.04	81.12
A42	993	77.9	0	.65	.22	.06	78.83
						AVERAGE>>	79.04
						STD DEV>>	1.13
						90% C.I.>	0.93

AIRCRAFT: PIPER SENECA III TEST DATE: 9/18/84

REFERENCE ALTITUDE 713.00 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B47	729.00	74.20	0.00	0.21	0.18	0.00	74.59
B48	708.00	74.20	0.00	-0.07	0.18	0.00	74.31
B49	805.00	73.65	0.00	1.16	0.18	0.00	74.99
B50	709.00	75.10	0.00	-0.05	0.18	0.00	75.23
B51	721.00	73.85	0.00	0.11	0.18	0.00	74.14
B52	715.00	74.45	0.00	0.03	0.18	0.00	74.66
						AVERAGE>>	74.65
						STD DEV>>	0.41
						90% C.I.>	0.33

AIRCRAFT: SENECA III TEST DATE: 9/19/84

REFERENCE ALTITUDE: 1014'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
C26	919	81.85	.18	-.94	.95	.22	82.26
C27	990	80.9	.2	-.23	.95	.22	82.04
C28	1016	81.25	.2	0	.95	.22	82.62
C29	983	82.7	.2	-.3	.95	.22	83.77
C30	1094	79.65	.22	.73	.95	.22	81.77
C31	948	81.35	.19	-.64	.95	.22	82.07
						AVERAGE>>	82.42
						STD DEV>>	0.72
						90% C.I.>	0.59

TABLE VI

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: MOONEY 231 TEST DATE: 9/18/84

REFERENCE ALTITUDE 778'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A23	715	78.7	0	-.81	0	-.08	77.81
A24	669	79.15	0	-1.44	0	-.08	77.63
A25	837	77.2	0	.7	0	-.08	77.82
A26	827	77.35	0	.58	0	-.08	77.85
A27	836	77.35	0	.69	0	-.08	77.96
A28	827	77.35	0	.58	0	-.08	77.85
						AVERAGE>>	77.82
						STD DEV>>	0.11
						90% C.I.>	0.09

AIRCRAFT: MOONEY 231 TEST DATE: 9/18/84

REFERENCE ALTITUDE 643 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B29	675	74.05	0	0.46	0	0	74.51
B30	616	75.25	0	-0.41	0	0	74.84
B31	651	74.1	0	0.12	0	0	74.22
B32	592	74.65	0	-0.79	0	0	73.86
B33	758	73.2	0	1.57	0	0	74.77
B34	730	72.6	0	1.21	0	0	73.81
						AVERAGE>>	74.34
						STD DEV>>	0.45
						90% C.I.>	0.37

TABLE V

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: BEECH A-36 TEST DATE: 9/18/84

REFERENCE ALTITUDE 753'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A6	869	81.9	0	1.37	.2	0.60	84.07
A7	784	82	0	.39	.2	0.58	83.17
A8	793	80.55	0	.49	.2	0.58	81.82
A9	899	80.6	0	1.69	.2	0.61	83.10
A10	798	81.35	0	.55	.12	0.58	82.60
						AVERAGE>>	82.95
						STD. DEV>	0.83
						90% C.I.>	0.79

AIRCRAFT: BEECH A-36 TEST DATE: 9/18/84

REFERENCE ALTITUDE = 625 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B11	597	76.3	0	-0.44	.09	0	75.95
B12	678	75.05	0	0.78	.09	0	75.92
B13	718	73.95	0	1.33	.09	0	75.37
B14	684	74.45	0	0.86	.09	0	75.40
B15	766	73.8	0	1.94	.09	0	75.83
B16	759	74.85	0	1.86	.09	0	76.80
B17	715	74.9	0	1.29	.09	0	76.28
						AVERAGE>>	75.93
						STD DEV>>	0.50
						90% C.I.>	0.37

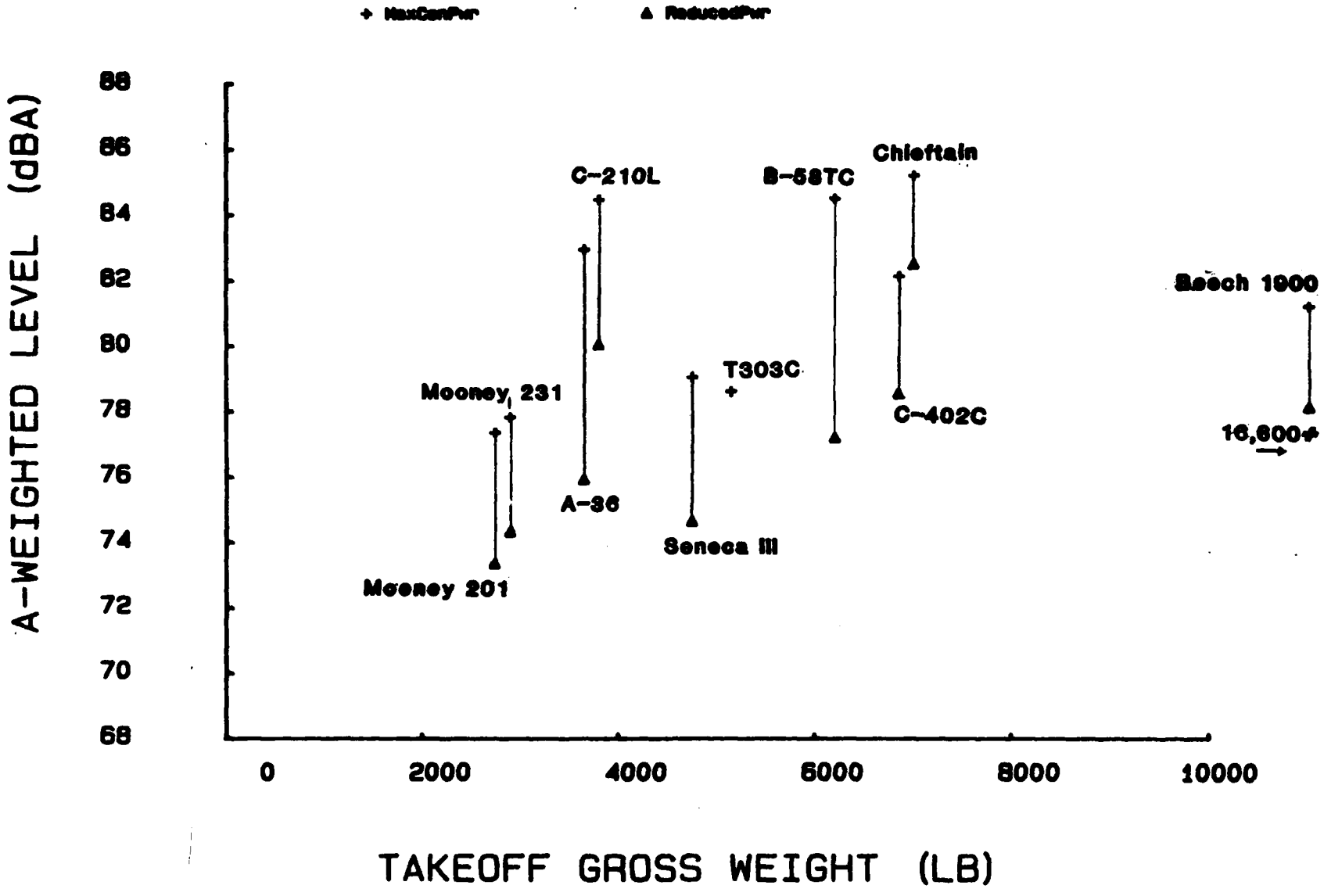
VIII. MEASURED AND CORRECTED DATA:

Tables V through XIV present the "as measured" noise levels and airplane altitude over the measurement point for each data run. To these noise levels are added the adjustments shown in the tables for off-reference meteorological conditions, Delta (M); altitude, Delta (1); helical tip Mach number, Delta (2); and engine power, Delta (3) to obtain the corrected noise levels shown.

Table XV presents the data used in calculating the off-reference power correction, Delta (3) for airplanes with normally aspirated engines (the beech A-36,the Mooney 201 and the Cessna 210L).

FIGURE 3

PROPELLER DRIVEN SMALL AIRPLANE TAKEOFF NOISE LEVELS



throughout the test run. The noise level over the measurement site for this series averaged 82.42 dBA, 3.38 dB more than with maximum continuous power and 7.77 dB over the level when the reduced power procedures were used.

The data presented in Table IV are shown in graphical form on Figure 3.

TABLE IV

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

TAKEOFF NOISE LEVELS

AIRCRAFT	CERT LEVEL dBA	REDUCED POWER dBA	DELTA dBA
BEECH A-36	82.95	75.93	7.0
MOONEY 231	77.82	74.34	3.5
SENECA III	79.04	74.65	4.4
MOONEY 201	77.35	73.36	4.0
CESSNA 210L	84.49	80.06	4.4
BEECH 58TC	84.49	77.20	7.3
CESSNA T303	78.59	-	-
BEECH 1900	81.16	78.10	3.1
CESSNA 402C	82.12	78.54	3.6
PIPER CHIEFTAIN	85.18	82.49	2.7

AVERAGE NOISE REDUCTION . . 4.4 dB

data at other Mach numbers would be required to determine an approved value for k for each aircraft.

E. Measured sound levels were adjusted for engine power by algebraically adding an increment equal to:

$$\text{Delta (3)} = 17 \text{ Log } (P_R/P_T)$$

where P_T and P_R are the test and reference engine powers, respectively.

For all of the tests at maximum continuous power (and maximum takeoff power for the Seneca III), an off-reference temperature correction equal to the square root of the ratio of the absolute temperatures, $(T_{ref.std.atmo.}/T_{test})^{1/2}$, was applied to obtain the test engine power. For normally aspirated engines, the following additional correction, taken from NACA Report No. 654 entitled "General Airplane Performance," was used to calculate P_T:

$$HP_{Alt.} = HP_{Sea\ Level}\ (\sigma - 0.017)/0.883$$

where σ = air density ratio.

These calculations are presented in Section VIII.

VII. Test Results

Table IV lists the fully corrected noise levels for the ten aircraft tested in accordance with the proposed certifications and the nine tested using reduced power. The noise reduction achieved by reducing from maximum continuous power to about 75% power with a lower propeller rpm varied from about 3 to over 7 decibels with an average noise reduction of 4.4 decibels. The Seneca III was also tested at maximum takeoff power

TABLE III

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

HELICAL TIP MACH NUMBER COEFFICIENTS

AIRCRAFT	'A' SERIES TIP MACH NO.	REDUCED POWER TIP MACH NO.	TIP MACH NO. COEF. (k)
BEECH A-36	0.855	75.93	135
MOONEY 231	0.797	74.34	85
SENECA III	0.783	0.724	142
MOONEY 201	0.784	0.700	78
CESSNA 210L	0.844	0.752	59
BEECH 58TC	0.823	0.739	145
CESSNA T303	-	-	-
BEECH 1900	0.745	0.685	71
CESSNA 402C	0.814	0.743	102
PIPER CHIEFTAIN	0.802	0.753	102
SENECA III	0.783	0.831*	105
		AVERAGE =	103

* MAX. TAKEOFF POWER

where: H_T is the height in feet of the test aircraft over the measurement point, and

α is the rate of absorption for test day conditions at 500 Hz specified in the Society of Automotive Engineer's Aeronautical Recommended Practice #866A entitled"Standard Values of Atmospheric Absorption as a Function of Temperature and Humidity for Use in Evaluating Aircraft Flyover Noise."

C. The measured sound levels were adjusted for off-reference altitude by algebraically adding an increment equal to:

$$\text{Delta (1)} = 22 \text{ Log } (H_T/H_R)$$

where: H_T is as defined above, and

H_R is the reference height of the aircraft over the measurement point.

D. For test runs where the test helical tip Mach number (M_T) was smaller than the reference helical tip Mach number (M_R), the measured sound levels were adjusted by algebraically adding an increment equal to:

$$\text{Delta (2)} = k \text{ Log } (M_R/M_T)$$

where the constant k was assigned the nominal value of 150 allowed in the proposed regulations when M_T is smaller than M_R.

For those aircraft tested at two propeller rpms, values of k were calculated and are listed in Table III. It must be emphasized that these constants were calculated from only two nominal values of helical tip Mach numbers and that additional

TABLE II

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

REFERENCE TAKEOFF CONDITIONS

	SEA LEVEL STANDARD DAY				MCP (A Series)		REDUCED POWER (B Series)		
AIRCRAFT	MAX GROSS T/O WT(lbs)	T/O DIST To 50'(ft)	Vy(Kts)	MAX CLIMB RATE(ft/min)	REF Mtip	REF ALT (ft)	PROP RPM	REF Mtip	REF ALT (ft)
BEECH A-36	3650	2100	100	1140	0.8576	753	2400	0.7655	625
MOONEY 231	2900	1750	94	1090	0.7940	785	2400	0.7091	643
SENECA III	4750	1850	92	1275	0.7847	923	2400	0.7263	719
MOONEY 201	2740	1900	88	1040	0.7920	789	2400	0.7068	645
CESSNA 210	3800	2030	96	950	0.8566	656	2400	0.7643	618
BEECH 58TC	4200	2525	115	1400	0.8413	830	2400	0.7520	685
CESSNA T303	5150	1750	103	1400	0.7114	975	--	--	--
BEECH 1900	16400	3400	135	2300	0.7556	858	1550	0.6940	798
CESSNA 402	6850	2195	109	1450	0.8239	853	2450	0.7508	639
PIPER CHIEFTAIN	7000	2700	101	1400	0.8195	810	2400	0.7658	654

TABLE I

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT SPECIFICATIONS

			ENGINE DATA				PROPELLER DATA					
AIRCRAFT	MODEL	TYPE	NUMBER	MAXCONT POWER	PROP RPM	AIR INTAKE	MODEL	NUMBER BLADES	DIA (Inch.)	PITCH F/V	WING SPAN	GEAR F/R
BEECH A-36 BONANZA	CONTINENTAL IO-550-B	PISTON	1	300	2700	NORM. ASPRI.	McCAULEY	3	80	V	33'5"	R
MOONEY 231 M20K	CONTINENTAL TSIO-360-GB	PISTON	1	210	2700	TURBO	McCAULEY	2	74	V	36'1"	R
PIPER PA34-220T SENECA III	CONTINENTAL TSIO-360	PISTON	2	200	2600	TURBO	McCAULEY	2	76	V	38'11"	R
MOONEY 201 M20J	LYCOMING IO-360-A3B6D	PISTON	1	200	2700	NORM. ASPIR.	McCAULEY	2	74	V	36'1"	R
CESSNA 210L CENTURIAN	CONTINENTAL IO-520-L	PISTON	1	285	2700	NORM. ASPIR.	McCAULEY	3	80	V	36'9"	R
BEECH 58TC BARON	CONTINENTAL TSIO-520-WB	PISTON	2	325	2700	TURBO	McCAULET	3	78	V	37'10"	R
CESSNA T303 CRUSADER	CONTINENTAL TSIO-520-AE	PISTON	2	250	2400	TURBO	McCAULEY	3	74	V	38'10"	R
BEECH 1900 AIRLINER	PT6A-65B	TURBOPROP	2	1100	1700	TURBINE	HARTZELL	4	109.5	V	54'6"	R
CESSNA 402C BUSINESSLINER	CONTINENTAL TSIO-520-WB	PISTON	2	325	2700	TURBO	McCAULEY	3	76.5	V	44'1"	R
PIPER PA31-350 CHIEFTAIN	LYCOMING TSIO-540-J2BD	PISTON	2	350	2575	TURBO	HARTZELL	3	80	V	40'8"	R

V. Aircraft Specifications

Table I presents selected physical characteristics for each of the test aircraft while Table II lists the reference takeoff performance values for each airplane.

VI. Data Adjustment

A. Adjustments to the measured data tabulated in Section VIII were made in accordance with the proposed regulatory changes to account for the effects of:

(1) Differences in atmospheric absorption between meteorological test conditions and reference conditions.

(2) Differences in the noise path length between the actual airplane flight path

(3) The change in the helical tip Mach number between test and reference conditions.

(4) The change in engine power between test and reference conditions

B. No correction for atmospheric absorption was required if the tests were conducted within the "no correction" window (temperature between 50 and 95°F and relative humidity between 45 and 95 percent). The temperature was within the "no correction" window for all of the data runs but the relative humidity was below 45% for nearly one-half of the tests. For these, the measured sound levels were adjusted from test day meteorological conditions to reference conditions by adding an increment equal to:

$$\text{Delta (M)} = (\alpha - 0.7)H_T/1000$$

TABLE IX

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: CESSNA 210L TEST DATE: 9/18/84

REFERENCE ALTITUDE: 656'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A80	714	83.05	.14	.81	.97	.65	85.62
A81	724	82.2	.14	.94	.97	.65	84.90
A83	553	83.5	.11	-1.63	.97	.61	83.56
A84	736	81.45	.15	1.1	.97	.66	84.33
A85	672	82.45	.13	.23	.97	.64	84.42
A86	675	82	.13	.27	1.04	.65	84.09
						AVERAGE>>	84.49
						STD DEV>>	0.71
						90% C.I.>	0.58

AIRCRAFT: CESSNA 210L TEST DATE: 9/18/84

REFERENCE ALTITUDE 616.00 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B87	643.00	78.35	0.13	0.41	0.94	0.00	79.83
B88	697.00	77.90	0.14	1.18	1.03	0.00	80.25
B89	601.00	79.70	0.12	-0.24	1.03	0.00	80.61
B90	693.00	77.65	0.14	1.13	1.03	0.00	79.95
B91	523.00	80.30	0.10	-1.56	1.03	0.00	79.87
B92	713.00	77.40	0.14	1.40	0.94	0.00	79.88
						AVERAGE>>	80.06
						STD DEV>>	0.31
						90% C.I.>	0.26

TABLE X

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: BEECH BARON 58TC TEST DATE: 9/18/84

REFERENCE ALTITUDE: 837'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A93	871	81.9	.17	.38	1.43	.27	84.15
A94	952	80.3	.19	1.23	1.43	.27	83.42
A95	862	83.95	.17	.28	1.43	.27	86.10
A96	991	81.1	.2	1.61	1.43	.27	84.61
A97	961	82.1	.19	1.32	1.35	.27	85.23
A98	832	81.6	.17	-.06	1.43	.27	83.41
						AVERAGE>>	84.49
						STD DEV>>	1.06
						90% C.I.>	0.87

AIRCRAFT: BEECH BARON 58TC TEST DATE: 9/18/84

REFERENCE ALTITUDE 685.00 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B100	827.00	73.70	0.17	..80	1.14	0.00	76.81
B101	774.00	75.55	0.15	1.17	1.22	0.00	78.09
B103	797.00	74.90	0.16	1.45	1.14	0.00	77.65
B104	747.00	74.45	0.15	0.83	1.14	0.00	76.57
B105	593.00	77.15	0.12	-1.38	1.22	0.00	77.11
B106	806.00	74.05	0.16	1.55	1.22	0.00	76.98
						AVERAGE>>	77.20
						STD DEV>>	0.56
						90% C.I.>	0.46

TABLE XI

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: CESSNA T303 TEST DATE: 9/19/84

REFERENCE ALTITUDE: 975'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A4	914	77.5	0	-.62	1.52	.18	78.58
A5	1182	75.5	0	1.84	1.24	.13	78.71
A6	895	77.55	0	-.82	1.43	.15	78.31
A7	906	78	0	-.7	1.52	.18	79.00
A8	1191	74.4	0	1.91	1.52	.18	78.01
A9	1041	76.6	0	.63	1.52	.18	78.93
						AVERAGE>>	78.59
						STD DEV>>	0.38
						90% C.I.>	0.31

TABLE XII

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: BEECH 1900 TEST DATE: 9/19/84

REFERENCE ALTITUDE: 869'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A10	782	80.55	0	-1.01	1.27	.2	81.01
A11	964	77.95	0	.99	.92	.2	80.06
A13	951	80.8	0	.86	.48	.2	82.34
A15	1028	78.75	0	1.61	.92	.23	81.51
A16	931	77.9	0	.66	.92	.23	79.71
A17	977	79.95	0	1.12	1.01	.23	82.31
						AVERAGE>>	81.16
						STD DEV>>	1.11
						90% C.I.>	0.91

AIRCRAFT: BEECH 1900 TEST DATE: 9/19/84

REFERENCE ALTITUDE 798.00 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B19	844.00	77.85	0.00	0.54	1.04	0.00	79.43
B20	952.00	74.80	0.00	1.69	0.85	0.00	77.34
B21	952.00	74.75	0.00	1.69	0.76	0.00	77.20
B23	948.00	75.25	0.00	1.65	0.76	0.00	77.66
B24	834.00	77.45	0.00	0.42	0.85	0.00	78.72
B25	908.00	76.25	0.00	1.23	0.76	0.00	78.24
						AVERAGE>>	78.10
						STD DEV>>	0.87
						90% C.I.>	0.71

TABLE XIII

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: CESSNA 402C TEST DATE: 9/19/84

REFERENCE ALTITUDE: 846'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A36	964	79.55	.29	1.25	.87	.2	82.16
A37	924	80	.28	.84	.87	.2	82.19
A38	958	79.8	.29	1.19	.87	.2	82.35
A40	882	80.15	.26	.4	.79	.18	81.78
A41	951	80.2	.29	1.12	.79	.18	82.58
A42	889	79.95	.27	.47	.79	.18	81.66
						AVERAGE>>	82.12
						STD DEV>>	0.35
						90% C.I.>	0.29

AIRCRAFT: CESSNA 402C TEST DATE: 9/19/84

REFERENCE ALTITUDE 639.00 w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B45	776.00	75.10	0.39	1.86	0.70	0.00	78.05
B46	537.00	79.05	0.16	-1.66	0.79	0.00	78.34
B47	677.00	76.65	0.20	0.55	0.70	0.00	78.10
B48	752.00	75.80	0.23	1.56	0.70	0.00	78.29
B49	651.00	76.80	0.20	0.18	0.79	0.00	77.97
B50	597.00	80.15	0.18	-0.65	0.79	0.00	80.47
						AVERAGE>>	78.54
						STD DEV>>	0.96
						90% C.I.>	0.79

TABLE XIV

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: PIPER NAVAJO CHIEFTAIN TEST DATE: 9/19/84

REFERENCE ALTITUDE 810'

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
A51	915	82.65	0.27	1.16	1.40	0.32	85.81
A52	920	81.60	0.28	1.22	1.40	0.32	84.82
A53	776	82.55	0.23	-0.41	1.40	0.32	84.09
A54	934	82.30	0.28	1.36	1.40	0.32	85.66
A55	901	82.60	0.27	1.02	1.32	0.32	85.53
						AVERAGE>>	85.18
						STD DEV>>	0.72
						90% C.I.>	0.69

AIRCRAFT: PIPER NAVAJO CHIEFTAIN TEST DATE: 9/19/84

REFERENCE ALTITUDE 654' w/REDUCED POWER

EVENT	MEAS.ALT AGL(ft)	NOISE LVL dBA(MEAS)	DELTA(M)	DELTA(1)	DELTA(2)	DELTA(3)	NOISE LVL dBA(CORR)
B57	979.00	77.85	0.29	3.85	1.37	0.00	83.36
B58	907.00	77.50	0.27	3.12	1.37	0.00	82.26
B60	690.00	79.55	0.21	0.51	1.46	0.00	81.73
B61	933.00	77.40	0.28	3.39	1.37	0.00	82.44
B62	844.00	78.60	0.25	2.44	1.37	0.00	82.66
						AVERAGE>>	82.49
						STD DEV>>	0.60
						90% C.I.>	0.57

TABLE XV

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA,KS
FIELD ELEVATION 1270'

AIRCRAFT: BEECH A-36 TEST DATE: 9/18/84

MAX.CONT.POWER AT S.L. 300 bhp

A80 EVENT	ALTITUDE AGL(ft)	ALTITUDE MSL(ft)	DENSITY RATIO	STD.TEMP DEG.F	OAT DEG.F	POWER AT ALTITUDE	DELTA 3 DB
A6	869	2139	.93889	51.4	62	276.44	0.60
A7	784	2054	.94126	51.7	62	277.31	0.58
A8	793	2063	.94101	51.6	62	277.20	0.58
A9	899	2169	.93805	51.3	62	276.13	0.61
A10	798	2068	.94087	51.6	61	277.42	0.58

AIRCRAFT: MOONEY 201 TEST DATE: 9/18/84

MAX.CONT.POWER AT S.L. 200 bhp

EVENT	ALTITUDE AGL(ft)	ALTITUDE MSL(ft)	DENSITY RATIO	STD.TEMP DEG.F	OAT DEG.F	POWER AT ALTITUDE	DELTA 3 DB
A56	793	2063	.94101	51.6	68	183.77	0.62
A57	702	1972	.94355	52	68	184.40	0.60
A58	721	1991	.94302	51.9	70	183.93	0.62
A61	749	2019	.94224	51.8	70	183.73	0.63
A62	717	1987	.94313	51.9	70	183.95	0.62
A64	838	2108	.94255	51.9	70	183.80	0.62

AIRCRAFT: CESSNA 210L TEST DATE: 9/18/84

MAX.CONT.POWER AT S.L. 285 BHP

EVENT	ALTITUDE AGL(ft)	ALTITUDE MSL(ft)	DENSITY RATIO	STD.TEMP DEG.F	OAT DEG.F	POWER AT ALTITUDE	DELTA 3 DB
A80	714	1984	.94322	51.9	75	260.95	0.65
A81	724	1994	.94294	51.9	75	260.86	0.65
A83	553	1823	.94774	52.5	75	262.53	0.61
A84	736	2006	.9426	51.8	75	260.73	0.66
A85	672	1942	.94439	52.1	75	261.37	0.64
A86	675	1945	.94431	52.1	76	261.10	0.65

APPENDIX A

METEOROLOGICAL DATA

TABLE A1

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA MUNICIPAL AIRPORT TEST DATE: 9/18/84

TIME	BAR.PRESS. In.Hg.	TEMP. Deg F	REL.HUMID. Percent	WIND AT 10m. SPEED(mph)	DIR
7:30	30.25	49.8	88	0.5	SE
7:44		50.6	88	1.0	SE
8:32	30.27	53.8	88	3.0	SE
8:43		54.6	88	3.0	SE
9:01		56.3	84	2.5	SE
9:38	30.27	60.1	74	4.0	SSE
9:58		62.7	70	3.0	S
10:10		62.4	66	4.0	SSE
10:29	30.28	63.1	62	5.5	SSE
11:16		66.4	57	9.0	SE
11.38	30.26	67.6	54	6.0	SSE
12:02		71.5	48	11.0	SSE
12:31	30.26	74.5	46	5.5	S
1:30	30.23	76.4	42	4.5	SSE
1:49		77.4	42	8.0	SSE
2:09	30.22	77.7	38	4.5	SSE
2:37		76.6	36	6.0	SE
3:40	30.19	77.6	44	10.0	SE
3:59		77.8	38	7.0	SE
4:18	30.18	79.7	38	6.0	SE
4:57	30.16	79.8	38	7.0	ESE
5:21		79.9	40	8.0	SE
5:40		80.2	40	6.0	ESE

TABLE A2

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

SALINA MUNICIPAL AIRPORT TEST DATE: 9/19/84

TIME	BAR.PRESS. In.Hg.	TEMP. Deg F	REL.HUMID. Percent	WIND AT 10m. SPEED(mph)	DIR
7:40	30.15	55.0	86	2.0	SE
8:13		56.7	73	2.0	SE
8:34		59.8	81	1.0	SE
9:24	30.16	61.0	67	4.0	SSE
9:46		64.0	60	5.0	SSE
10:07		68.0	52	4.5	SSE
10:21		71.8	50	7.0	SSE
10:29		74.1	49	4.0	SSE
11:09		78.5	34	11.5	SSE
11:33	30.14	82.5		4.5	S
12:06		84.0	30	8.0	SSE
12:46		87.1	28	8.0	SE
1:18		87.4	28	8.0	SE
1:31		88.6	25	8.0	ESE
1:51		88.2	24	6.0	SSE
4:23	30.01	88.0	25	10.0	SE
4:36		88.1	23	12.0	SE
4:54		88.8	22	10.0	SSE
5:10		87.7	22	10.0	SE
5 23		87.5	22	14.0	SE

APPENDIX B

COCKPIT DATA

TABLE B1

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: BEECH A-36 TEST DATE: 9/18/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG F
A6	7:55:51	100	860	27.5	2700	62
A7	8:04:45	102	770	27.5	2700	62
A8	8:22:31	103	780	27.5	2700	62
A9	8:28:21	100	820	27.5	2700	62
A10	8:31:41	102	780	27.5	2700	61
B11	8:36:45	105	480	27.5	2400	61
B12	8:42:48	103	520	28.0	2400	60
B13	8:46:16	---	690	28.0	2400	61
B14	8:49:50	100	680	28.0	2400	61
B15	8:53:44	101	760	28.0	2400	61
B16	8:57:04	101	680	28.0	2400	61

TABLE B2

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: MOONEY 231 TEST DATE: 9/18/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG C
A23	9:54:36	97	670	40.0	2695	12
A24	9:57:55	95	680	40.0	2695	12
A25	10:01:06	97	800	39.8	2695	12
A26	10:04:01	97	800	40.0	2695	12
A27	10:07:08	97	790	39.8	2695	12
A28	10:10:11	97	790	39.8	2695	12
B29	10:13:45	95	650	35.0	2400	13
B30	10:16:45	95	590	35.2	2400	13
B31	10:19:54	95	640	35.2	2400	13
B32	10:22:50	95	570	35.0	2400	13
B33	10:29:09	95	640	35.0	2400	13
B34	10:32:14	95	700	35.0	2400	14

TABLE B3

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: SENECA III

TEST DATE: 9/18/84
C SERIES: 9/19/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG F
A37	11:27:20	90	770	40.0	2600	62
A38	11:32:26	90	880	40.0	2600	62
A39	11:37:33	92	880	40.0	2600	62
A40	11:42:29	91	880	40.0	2600	62
A41	11:46:57	91	920	40.0	2600	62
A42	11:51:37	90	900	40.0	2600	63
B47	12:16:28	95	710	34.0	2400	63
B48	12:21:10	93	710	34.0	2400	63
B49	12:25:47	90	730	33.5	2400	63
B50	12:30:30	92	680	33.5	2400	63
B51	12:35:20	90	700	34.0	2400	63
B52	12:40:33	92	700	34.0	2400	63
C26	11:09:01	92	820	40.0	2800	75
C27	11:13:55	93	880	40.0	2800	75
C28	11:19:00	90	900	40.0	2800	75
C29	11:23:43	90	890	40.0	2800	75
C30	11:28:23	90	960	40.0	2800	75
C31	11:32:56	90	820	40.0	2800	75

TABLE B4

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: MOONEY 201 TEST DATE: 9/18/84

	COCKPIT DATA					
	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
ENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG C
56	1:40:29	87	770	27.5	2700	20
57	1:43:46	89	700	28.0	2700	20
58	1:46:32	87	700	28.0	2700	21
61	1:54:55	88	730	28.0	2700	21
62	1:57:33	87	700	28.0	2700	21
64	2:03:01	--	800	28.0	2700	21
66	2:09:19	88	670	27.5	2400	21
71	2:23:24	89	610	28.0	2400	21
74	2:31:49	88	670	28.0	2400	21
76	2:37:49	87	640	28.0	2400	21
77	2:39:24	87	690	28.0	2400	21
78	2:42:15	87	680	28.0	2400	21

TABLE B5

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: CESSNA 210L TEST DATE: 9/18/84

	COCKPIT DATA					
	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
VENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG F
A80	3:43:29	97	680	F.T.	2700	75
A81	3:46:58	96	740	F.T.	2700	75
A83	3:55:36	97	570	F.T.	2700	75
A84	3:59:19	97	710	F.T.	2700	75
A85	4:03:08	98	660	F.T.	2700	75
A86	4:06:30	98	660	F.T.	2700	76
B87	4:10:28	97	640	F.T.	2400	76
B88	4:14:19	97	690	F.T.	2400	76
B89	4:18:21	98	610	F.T.	2400	76
B90	4:22:10	97	680	F.T.	2400	76
B91	4:25:33	97	540	F.T.	2400	76
B92	4:28:45	98	700	F.T.	2400	76

TABLE B6

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: BEECH 58TC TEST DATE: 9/18/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG F
A93	4:58:19	115	770	39.5	2685	78
A94	5:01:47	112	820	39.5	2685	78
A95	5:05:56	111	780	39.5	2685	78
A96	5:08:04	114	880	39.5	2685	78
A97	5:11:11	113	840	39.5	2685	78
A98	5:14:39	115	730	39.5	2685	78
B100	5:24:00	116	720	36.5	2400	78
B101	5:27:35	115	680	36.5	2400	78
B103	5:34:13	117	720	36.5	2400	78
B104	5:39:55	115	680	36.5	2400	78
B105	5:42:30	115	540	36.5	2400	78
B106	5:45:46	113	750	36.5	2400	78

TABLE B7

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: CESSNA T303 TEST DATE: 9/19/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG F
A4	8:12:36	105	840	32.5	2370	72
A5	8:17:29	105	1080	32.5	2370	68
A6	8:22:46	105	820	32.5	2370	70
A7	8:28:14	105	840	32.5	2370	72
A8	8:33:42	102	1060	32.5	2370	72
A9	8:40:18	105	940	32.5	2370	72

TABLE B8

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: BEECH 1900 TEST DATE: 9/19/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	TORQUE	PROP RPM	OAT DEG C
A10	9:23:30	138	770	3400	1690	23
A11	9:28:32	140	840	3400	1700	23
A13	9:36:53	145	850	3400	1700	23
A15	9:45:42	140	880	3400	1700	24
A16	9:49:37	138	840	3400	1700	24
A17	9:53 28	135	870	3400	1700	24
B19	10:02:16	140	820	3400	1550	24
B20	10:07:14	135	870	3400	1550	23
B21	10:11:48	137	880	3400	1550	22
B23	10:20:35	140	870	3400	1550	23
B24	10:24:39	140	770	3400	1550	23
B25	10:28:42	137	840	3400	1550	23

TABLE B9

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: CESSNA 402C TEST DATE: 9/19/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG C
A36	--	---	---	39.0	2700	23
A37	--	---	---	39.0	2700	23
A38	--	---	---	39.0	2700	23
A40	1:18:00	110	840	40.0	2700	22
A41	1:21:03	110	930	40.0	2700	22
A42	1:24:24	110	880	40.0	2700	22
B45	1:34:02	110	780	29.5	2450	21
B46	1:37:00	110	570	29.5	2450	22
B47	1:39:59	110	710	29.5	2450	21
B48	1:43:12	110	780	29.5	2450	21
B49	1:47:05	110	650	29.5	2450	22
B50	1:50:52	110	620	29.5	2450	22

TABLE B10

FAA/GAMA PROPELLER AIRCRAFT
NOISE PROGRAM

AIRCRAFT: PIPER NAVAJO CHIEFTAIN TEST DATE: 9/19/84

COCKPIT DATA

	VIDEOTAPE			FLIGHT ENGINEER'S LOG		
EVENT	TIME	IAS Knots	ALTITUDE OVER MIC	MANIFORD PRESSURE	PROP RPM	OAT DEG F
A51	4:31:04	107	820	49.0	2560	82
A52	4:36:20	105	840	49.0	2560	82
A53	4:41:03	107	700	49.0	2560	82
A54	4:45:48	104	840	49.0	2560	82
A55	4:50:14	105	780	49.0	2560	82
A56	4:55:49	104	1020	49.0	2560	81
B57	5:01;34	110	890	40.0	2400	81
B58	5:06:09	112	820	40.0	2400	81
B60	5:14:55	113	640	40.0	2400	82
B61	5:19:38	113	860	40.0	2400	81
B62	5:24:08	111	790	40.0	2400	81

ATTACHMENT A

PRINT DATE 09/19/83

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

AIRPORT MASTER RECORD

FORM APPROVED OMB NO. 04-R0001

36035

1 ASSOC CITY: SALINA 4 STATE: KS FAA SITE NR: 06870.*A
2@ AIRPORT NAME: SALINA RGNL 5 COUNTY: SALINE KS
3 CBD TO AIRPORT(NM): 03 SW 6 REG/ADO: ACE/MONC 7 SECT AERO CHT: WICHITA

GENERAL

10 OWNERSHIP: PUBLIC
>11 OWNER: SALINA ARPT AUTH
>12 ADDRESS:
SALINA, KS 67401
>13 PHONE NR:
>14 MANAGER: JOHN F SCANLON
>15 ADDRESS: MUNICIPAL ARPT
SALINA, KS 67401
>16 PHONE NR: 913-827-3914
>17 ATTENDANCE SCHEDULE:
MONTHS DAYS HOURS
ALL ALL ALL

18 AIRPORT USE: PUBLIC
19 ARPT LAT: 38-47-29.7N SURVEYED
20 ARPT LONG: 097-39-02.3W
21 ARPT-ELEV: 01272 SURVEYED
22 ACREAGE: 2734
>23 RIGHT TRAFFIC:
>24 NON-COMM LANDING FEE: NO
25 NASP/FEDERAL AGREEMENT: NGPXT
26 FAR 139 INDEX: AASRS/73

SERVICES

>70 FUEL:*100LL B* A
>71 AIRFRAME RPRS: MAJOR
>72 PWR PLANT RPRS: MAJOR
>73 BOTTLE OXYGEN: NONE
>74 BULK OXYGEN: HIGH
75 TSNT STORAGE: TIE NGR
76 OTHER SERVICES: ARB
CNTR INSTR RNTL SALES
CARGO AVBCS

BASED AIRCRAFT

90 SINGLE ENG: 66
91 MULTI ENG: 17
92 JET: 1
TOTAL 84

93 HELICOPTERS: 1
94 GLIDERS:
95 MILITARY:

FACILITIES

>80 ARPT BCN:*CG
>81 APT LGT SKED: DUSK-DAWN
>82 UNICOM: 123.000
>83 WIND INDICATOR: YES-L
84 SEGMENTED CIRCLE: YES
85 CONTROL TWR: YES
86 FSS: SALINA
87 FSS ON ARPT: YES
88 FSS PHONE NR: 913-825-0886
89 TOLL FREE NR:

OPERATIONS

100 AIR CARRIER: 3868
101 COMMUTER:
102 AIR TAXI: 1866
103 G A LOCAL: 1900
104 G A ITNRNT: 31800
105 MILITARY: 33000
TOTAL: 70428

OPERATIONS FOR 12
MOS ENDING 06JUN83

RUNWAY DATA

	04/22	12/30	17/35
>30 RUNWAY IDENT			
>31 LENGTH:	3630	8997	13332
>32 WIDTH:	150	150	300
>33 SURF TYPE-COND	ASPH-G	ASPH-G	ASPH-CONC-G
>34 SURF TREATMENT			
35 GROSS WT: SW	70	95	75
36 (IN THSDS) DW	60	60	200
37 DTW	125	125	360
38 DDTW			

LIGHTING/APCH AIDS

	04/22		12/30		17/35			
>40 EDGE INTENSITY					HIGH			
41 NGU ELEMENT 81								
>42 RWY MARK TYPE-COND	BSC-G	/BSC-G	BSC-F	/BSC-F	PIR-F	/PIR-F	/	/
>43 VASI	N	/N	N	/N	V4L	/N	/	/
44 THR CROSSING HGT		/		/	50	/	/	/
45 VISUAL GLIDE ANGLE		/		/	3.00	/	/	/
>46 CNTRLN-TDZ	N-N	/N-N	N-N	/N-N	N-N	/N-N	/	/
>47 RVR-RVV	N-N	/N-N	N-N	/N-N	N-N	/N-N	/	/
>48 REIL	N	/N	N	/N	Y	/N	/	/
>49 APCH LIGHTS		/		/	SOALS	/MALSR	/	/

OBSTRUCTION DATA

	04/22		12/30		17/35			
50 FAR 77 CATEGORY	A(V)	/A(V)	B(V)	/B(V)	B	/PIR	/	/
>51 DISPLACED THR		/		/		/	/	/
>52 CTLG OBSTN		/HANGAR		/	TREE	/FENCE	/	/
>53 OBSTN MARKED/LGTD		/RL		/		/	/	/
>54 HGT ABOVE RWY END		/46		/	20	/01	/	/
>55 DIST FROM RWY END		/1650		/	400	/1500	/	/
>56 CNTRLN OFFSET		/250L		/	425R	/	/	/
57 OBSTN CLNC SLOPE	50:1	/5121	50:1	/50:1	17:1	/5121	/	/
58 CLOSE-IN OBSTN	N	/N	N	/N		/N	/	/

28:1 LANDING LENGTH

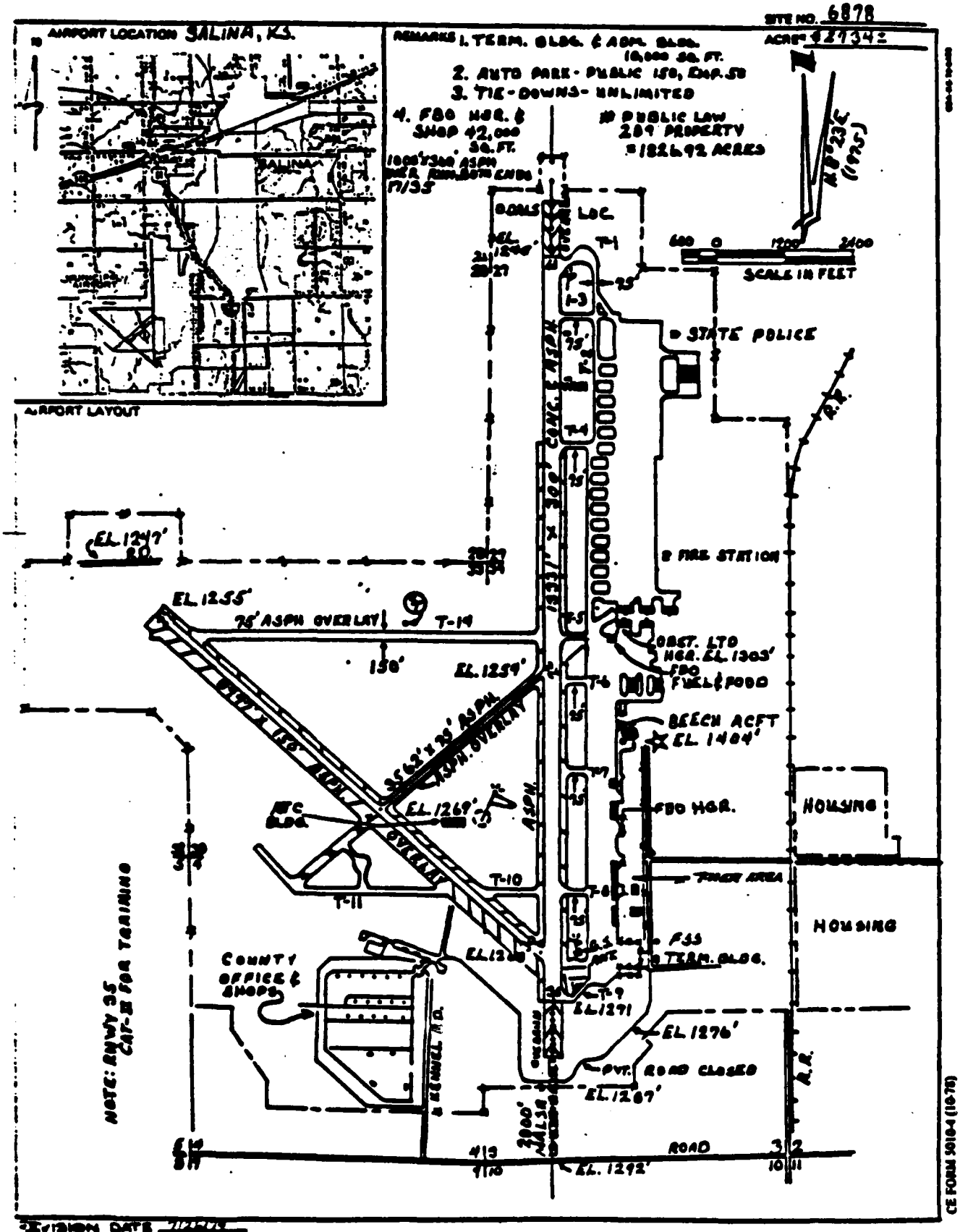
	04/22	12/30	17/35		
60 LANDING RWY-LENGTH	/	/	/	/	/
61 CTLG OBSTACLE	/	/	/	/	/
62 HGT-ABOVE THR	/	/	/	/	/
63 DIST FROM THR	/	/	/	/	/
64 CNTRLN OFFSET	/	/	/	/	/

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

>110 REMARKS:
A838 RWY 17 /35 <1000* BY 300* ASPH OVRN BOTH ENDS RWY 17/35.
A832 RWY 04 /22 RWY 4-22 CNTR 75* ASPH OVERLAY.
A878 JP4 SUBSTITUTED FOR CONJET A W/FSII WHEN NECESSARY.
A888 ROTG BCN LCTD AT 38-47-22.1N 097-38-21.8W
A118 -81 RWY 4-22 STW STRENGTHS FOR CNTR 75* ASPH OVERLAY: S-180, D-135 & DT-235.
A118 -82 TWY & APRON FAIR COND.
A118 -83 INTO-PLANE CONTRACT FUEL A NOT AVAILABLE.

111 INSPECTOR: (F) 112 LAST INSP: 06JUN83 113 LAST INFO REQ:

FAA FORM 5010-1 (6-80) SUPERSEDES PREVIOUS EDITION


SITE NO. 6878
AIRPORT LOCATION SALINA, KS.
REMARKS 1. TERM. BLDG. & ADM. BLDG. 10,000 SQ. FT.
2. AUTO PARK - PUBLIC 150, EMP. 50
3. TIE-DOWNS - UNLIMITED
4. FBO HGR. & SHOP 42,000 SQ. FT.
PUBLIC LAW 289 PROPERTY = 182.92 ACRES
ACRES 422.34±
AIRPORT LAYOUT
SCALE IN FEET
STATE POLICE
FIRE STATION
OBST. LTD HGR. EL. 1303'
FBO FUEL & POL
BEECH ACFT EL. 1404'
FBO HGR.
HOUSING
FENCE AREA
HOUSING
FSS
TERM. BLDG.
COUNTY OFFICE & SHOPS
EL. 1271
EL. 1276'
PVT. ROAD CLOSED
EL. 1267'
EL. 1292'
ROAD
EL. 1247'
EL. 1255'
75' ASPH OVERLAY
T-14
EL. 1259'
EL. 1269'
T-10
T-11
T-9
NOTE: RWY 35 CAT-II FOR TRAINING
CE FORM 5010-4 (1078)
REVISION DATE

END

FILMED

7-85

DTIC